

REMARKS

Claims 6-7 were in the application and rejected under Section 103 in view of Smayling (USP 5,642,295) in combination with JP patent 3-45299 (Satake) or JP pub. 7-261997 (Yukio).

In order to expedite prosecution, Applicant has amended the claims to clarify certain additional characteristics of the presently claimed invention (Applicant submits that the originally presented claims also patentably distinguish over the cited references). Applicant also has added new claims 8-9 to more fully claim Applicant's invention. No new matter has been added.

The present invention is directed to a data processor formed on a semiconductor substrate and including an electrically erasable or programmable non-volatile program memory, a CPU and a control circuit. The data processor operates, among other modes, in a boot mode. In the boot mode, the data processor operates in part to input data from outside of the semiconductor substrate (i.e., external to the data processor), and the input data are programmed into the program memory in the boot mode. When operating in this manner, the data processor is at risk if interrupts or exception processing, etc., occurs, which could adversely disrupt the programming process.

In accordance with the present invention, however, during erasing or programming of the program memory in the boot mode, the control circuit terminates or excludes interrupt requests or exception processing requests, etc., in order to provide improved programming security for the data processor in the boot mode. Such attributes of the present invention are submitted to be neither disclosed in nor suggested by the cited references, either alone or in combination.

Smayling discloses a semiconductor chip that includes an EEPROM 52 and a CPU 46. The CPU has a controller, but as Applicant understands Smayling the controller functions for controlling an automotive system that includes the semiconductor chip, sensors 30, 32, 34 and an instrumentation driver for driving set 24, etc. As the Examiner's comments seem to indicate, however, Smayling does not disclose operation of its controller in any manner described and claimed by Applicant.

Further, Applicant submits the references proposed to be combined with Smayling do not render obvious Applicant's invention as disclosed in the presently presented claims.

First, the Satake reference is distinguishable from Applicant's invention. Satake discloses a system including microprocessor 1, EEPROM 3 and read/write means 12. The read/write means executes a first write process. The microprocessor can execute a second write process for the EEPROM based on a power failure interrupt request after the first write process (e.g., p. 6, lines 15-25). In Satake, the microprocessor stores the power failure interrupt request to request flag 11, and the power failure interrupt request is put into a state of suspension. While it is not clear what in the references would suggest or motivate the proposed combination of Satake with Smayling, Applicant submits that in any event Satake does not disclose or suggest the presently claimed invention's operation wherein, during erasing or programming of the program memory in the boot mode, the control circuit terminates or excludes interrupt requests or exception processing requests, etc.

Yukio is similarly distinguishable. Yukio discloses a Flash ROM management system that includes Flash ROM 2 and processor 1. The Flash ROM management system can perform write processing or deletion processing of the Flash ROM, but the system permits an interrupt request of high priority during write or deletion processing of the Flash ROM. This is distinctly different from Applicant's invention as discussed above.

In short, Applicant submits that the presently presented claims are patentably distinguishable over the cited references, whether or not such references are properly combinable.

If there are any questions regarding the foregoing, Applicant's attorney requests an opportunity to discuss this case with the Examiner by way of a telephone or in-person interview.

Please charge any additional fees due, or credit any overpayment, to Deposit Account No. 50-0251. No new matter has been added.

Respectfully submitted,



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